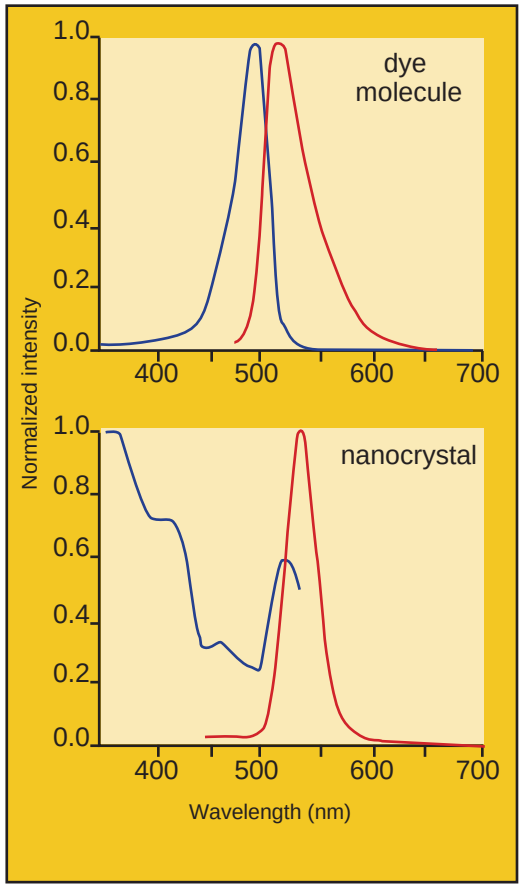
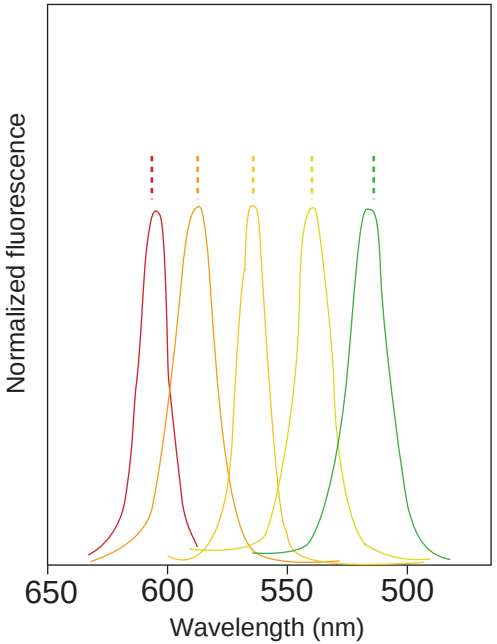
Nanocrystals Developed for Multicolor Biological Imaging

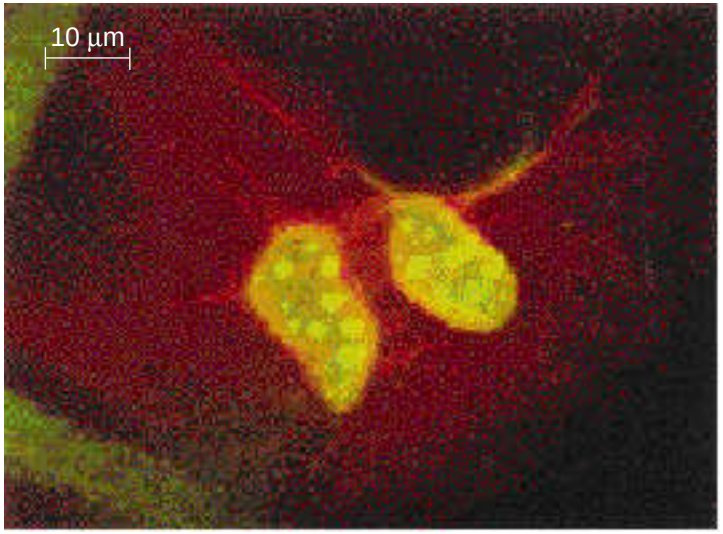
Cell Structure Revealed with Fluorescent Labeling



Excitation (blue) and emission (red) spectra of typical dye molecule, fluorescein (top), and CdSe/CdS nanocrystals (bottom). The broad excitation spectrum of the nanocrystals allows illumination of nanocrystals of different sizes with a single source. The narrow emission spectrum allows ready identification of each target structure.



Multiple labeling scheme. Emission spectra of CdSe nanocrystals of varying sizes. Inset shows true-color image of probes in aqueous buffer, all illuminated simultaneously with a handheld ultraviolet lamp.



Fluorescent microscope image of mouse 3T3 fibroblast cells labeled with “red” and “green” nanocrystals. The F-actin filaments are specifically labeled by nanocrystals that emit red light. The beaded nucleosomes in the cell nuclei are labeled with nanocrystals that emit green light. Both markers bind to the nuclear membrane which appears yellow (red and green).

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